

Amendments to the Claims:

The following claims will replace all prior versions of the claims in this application (in the unlikely event that no claims follow herein, the previously pending claims will remain):

1. (Currently Amended) A heat-curable epoxy resin composition comprising an epoxy resin and an oligomeric and/or polymeric impact modifier which is a polyamide, a polyurethane, a polyesteramide or a polyurethane formed from a polyester, wherein the impact modifier comprises a residue of at least one dimer fatty acid and/or dimer fatty diol, and wherein the composition is capable of phase separation upon curing to form phase-separated domains and/or particles comprising the impact modifier.
2. (Currently Amended) A cured epoxy resin composition comprising a reaction product of an epoxy resin and an oligomeric and/or polymeric impact modifier which is a polyamide, a polyurethane, a polyesteramide or a polyurethane formed from a polyester, wherein the impact modifier comprises a residue of at least one dimer fatty acid and/or dimer fatty diol, and wherein the cured resin composition comprises phase-separated domains and/or particles comprising the impact modifier.
- 3-4. (Cancelled).
5. (Currently Amended) A composition according to ~~claim 2~~ claim 31 wherein the polyester is formed from dimer fatty acids, adipic acid, and at least one diol having a molecular weight in the range from 50 to 200 ~~650~~.
6. (Currently Amended) A composition according to ~~claim 2~~ claim 1 wherein the impact modifier comprises polyamide.
7. (Currently Amended) A composition according to ~~claim 2~~ claim 31 wherein the impact modifier comprises in the range from 15 to 50% by weight of dimer fatty acid and/or dimer fatty diol residues.

8. (Currently Amended) A composition according to ~~claim 2~~ claim 31 wherein the weight ratio of epoxy resin:impact modifier is in the range from 1.5 to 10:1.
9. (Currently Amended) A composition according to ~~claim 2~~ claim 31 comprising in the range from 10 to 50% by weight of impact modifier.
10. (Currently Amended) A composition according to ~~claim 2~~ claim 31 comprising in the range from 4 to 20% by weight of dimer fatty acid and/or dimer fatty diol residues.
11. (Currently Amended) A composition according to ~~claim 2~~ claim 31 comprising a reaction product of an epoxy resin and a prepolymer wherein the prepolymer comprises the reaction product of an epoxy resin and the oligomeric and/or polymeric impact modifier.
12. (Original) A composition according to claim 11 wherein the prepolymer comprises in the range from 20 to 60% by weight of impact modifier.
13. (Cancelled).
14. (Currently Amended) A composition according to ~~claim 2~~ claim 33 wherein the domains and/or particles have a mean particle diameter in the range from 0.4 to 7 μm .
15. (Currently Amended) A composition according to ~~claim 2~~ claim 33 wherein the domains and/or particles have a mean aspect ratio in the range from 0.6 to 1.4:1.
16. (Currently Amended) A composition according to ~~claim 2~~ claim 33 wherein less than 25% by number of domains and/or particles have a particle diameter of less than 0.5 μm .

17. (Currently Amended) A composition according to ~~claim 2~~ claim 33 wherein less than 20% by number of domains and/or particles have a particle diameter of greater than 5 μm .

18. (Currently Amended) A composition according to ~~claim 2~~ claim 33 wherein the interfacial work of adhesion, G_a is greater than 70 Jm^{-2} .

19. (Currently Amended) A composition according to ~~claim 2~~ claim 33 wherein the essential work of fracture is in the range from 12 to 18 kJm^{-2} .

20. (Currently Amended) A prepolymer comprising a reaction product of an epoxy resin and an oligomeric and/or polymeric impact modifier, wherein the impact modifier is a polyester comprising from 15 to 50% by weight of a residue of at least one dimer fatty acid and/or dimer fatty diol, wherein said polyester comprises polyol residues derived from polyols having a molecular weight of between 50 and 200 ~~comprises in the range from 15 to 50% by weight of a residue of at least one dimer fatty acid and/or dimer fatty diol,~~ and wherein said prepolymer comprises in the range from 40 to 80% by weight of the epoxy resin and 20 to 60% by weight of the impact modifier.

21. (Currently Amended) A cured epoxy resin composition according to claim 33 comprising phase-separated domains and/or particles comprising impact modifier, said domains and/or particles having an aspect ratio in the range from 0.7 to 1.3:1, and a mean particle diameter in the range from 0.8 to 5 μm .

22. (Previously Presented) A composition according to claim 21 wherein at least 60% by number of the domains and/or particles have a particle diameter in the range from 0.8 to 5 μm .

23. (Previously Presented) A composition according to claim 21 wherein less than 25% by number of domains and/or particles have a particle diameter of less than 0.5 μm .

24. (Previously Presented) A composition according to claim 21 wherein less than 20% by number of domains and/or particles have a particle diameter of greater than 5 μm .

25. (Cancelled).

26. (Currently Amended) A heat-curable electronic assembly adhesive composition comprising the heat-curable epoxy resin composition according to claim 31 ~~an epoxy resin and an oligomeric and/or polymeric impact modifier, wherein said impact modifier comprises a residue of at least one dimer fatty acid and/or dimer fatty diol, and wherein said adhesive composition is capable of phase separation upon curing to form phase separated domains and/or particles comprising the impact modifier.~~

27. (Currently Amended) A circuit board comprising a chip or die bonded by the a cured epoxy resin adhesive composition according to claim 33, ~~wherein the adhesive composition comprises a reaction product of an epoxy resin and an oligomeric and/or polymeric impact modifier, wherein the impact modifier comprises a residue of at least one dimer fatty acid and/or dimer fatty diol, and wherein said cured resin adhesive composition contains phase separated domains and/or particles comprising the impact modifier.~~

28. (Currently Amended) A method of forming a heat-curable epoxy resin composition comprising the heat-curable epoxy resin composition according to claim 31 ~~an epoxy resin and an oligomeric and/or polymeric impact modifier, wherein the impact modifier comprises a residue of at least one dimer fatty acid and/or dimer fatty diol, and wherein the resin composition is capable of phase separation upon curing to form phase separated domains and/or particles comprising the impact modifier, which method comprises:~~

reacting the impact modifier with a first epoxy resin to form a prepolymer, and
mixing the prepolymer with a second epoxy resin.

29. (Original) A method according to claim 28 wherein the molecular weight of the first epoxy resin is less than the molecular weight of the second epoxy resin.

30. (Currently Amended) A method of assembling components, comprising:
a) interposing a heat-curable epoxy resin adhesive composition between respective surfaces of the components; and
b) curing said composition with the components in contact therewith, said adhesive composition comprising the heat-curable epoxy resin composition according to claim 31 comprising:
i) ~~an epoxy resin; and~~
ii) ~~an oligomeric and/or polymeric impact modifier which comprises a residue of at least one dimer fatty acid and/or dimer fatty diol,~~
wherein the adhesive composition is capable of phase separation upon curing, ~~to form phase-separated domains and/or particles comprising the impact modifier.~~

31. (Currently Amended) A heat-curable epoxy resin composition, comprising:
a) an epoxy resin, and
b) an oligomeric and/or polymeric impact modifier which is a polyester comprising a residue of at least one dimer fatty acid and/or dimer fatty diol, wherein said polyester comprises polyol residues derived from polyols having a molecular weight of between 50 and 200 ~~less than 650~~,
wherein the composition is capable of phase separation, upon curing, to form phase-separated domains and/or particles comprising the impact modifier.

32. (Cancelled).

33. (Currently Amended) A cured epoxy resin composition comprising a reaction product of:

- a) an epoxy resin; and
- b) an oligomeric and/or polymeric impact modifier which is a polyester comprising a residue of at least one dimer fatty acid and/or dimer fatty diol, wherein said polyester comprises polyol residues derived from polyols having a molecular weight of between 50 and 200 ~~less than 650~~,

wherein said composition comprises phase-separated domains and/or particles comprising the impact modifier.

34. (Cancelled).

35. (Currently Amended) A heat-curable epoxy resin of claim 31, ~~composition, comprising:~~

- ~~a) an epoxy resin; and~~
- ~~b) an oligomeric and/or polymeric impact modifier which is a polyester comprising a residue of at least one dimer fatty acid and/or dimer fatty diol, wherein said polyester comprises polyol residues derived from polyols selected from the group consisting of pentaerythritol, glycerol, trimethylolpropane, ethylene glycol, diethylene glycol, 1,3-propylene glycol, dipropylene glycol, 1,4-butylene glycol, 1,6-hexylene glycol, neopentyl glycol, 3-methyl pentane glycol, 1,2-propylene glycol, 1,4-bis(hydroxymethyl)cyclohexane, (1,4-cyclohexane-dimethanol) and dimer fatty diols~~

~~wherein the composition is capable of phase separation upon curing to form phase-separated domains and/or particles comprising the impact modifier.~~

36. (Currently Amended) The composition of ~~claim 33~~ claim 35, wherein said polyester comprises polyol residues derived from polyols selected from the group consisting of ethylene glycol, diethylene glycol, 1,4-butylene glycol, 1,6-hexylene glycol, neopentyl glycol and dimer fatty diols.

37. (Currently Amended) The composition of ~~claim 33~~ claim 35, wherein said polyester comprises polyol residues derived from polyols selected from the group consisting of 1,4-butylene glycol, 1,6-hexylene glycol and neopentyl glycol.

38. (Currently Amended) A cured epoxy resin composition of claim 33 ~~comprising a reaction product of:~~

- a) ~~an epoxy resin; and~~
- b) ~~an oligomeric and/or polymeric impact modifier which is a polyester comprising a residue of at least one dimer fatty acid and/or dimer fatty diol;~~ wherein said polyester comprises polyol residues derived from polyols selected from the group consisting of pentaerythritol, glycerol, trimethylolpropane, ethylene glycol, diethylene glycol, 1,3-propylene glycol, dipropylene glycol, 1,4-butylene glycol, 1,6-hexylene glycol, neopentyl glycol, 3-methyl pentane glycol, 1,2-propylene glycol, 1,4-bis(hydroxymethyl)cyclohexane, (1,4-cyclohexane-dimethanol) and dimer fatty diols,

~~wherein said composition comprises phase separated domains and/or particles comprising the impact modifier.~~

39. (Currently Amended) The composition of ~~claim 33~~ claim 38, wherein said polyester comprises polyol residues derived from polyols selected from the group consisting of ethylene glycol, diethylene glycol, 1,4-butylene glycol, 1,6-hexylene glycol, neopentyl glycol and dimer fatty diols.

40. (Currently Amended) The composition of ~~claim 33~~ claim 38, wherein said polyester comprises polyol residues derived from polyols selected from the group consisting of 1,4-butylene glycol, 1,6-hexylene glycol and neopentyl glycol.

41-44. (Cancelled).

45. (New) A heat-curable epoxy resin composition comprising an epoxy resin and an oligomeric and/or polymeric impact modifier, wherein the impact modifier comprises a residue of dimer fatty acids and non-dimer fatty acids wherein the ratio of dimer fatty acids to non-dimer fatty acids is in the range from 30 to 60%:30 to 60% by weight of the total dicarboxylic acids, and wherein the composition is capable of phase separation upon curing to form phase-separated domains and/or particles comprising the impact modifier.

46. (New) A heat-curable epoxy resin composition comprising an epoxy resin and an oligomeric and/or polymeric impact modifier, wherein the impact modifier is a polyester

wherein said polyester comprises polyol residues consisting essentially of pentaerythritol, glycerol, trimethylolpropane, ethylene glycol, diethylene glycol, 1,3-propylene glycol, dipropylene glycol, 1,4-butylene glycol, 1,6-hexylene glycol, neopentyl glycol, 3-methyl pentane glycol, 1,2-propylene glycol, 1,4-bis(hydroxymethyl)cyclohexane, (1,4-cyclohexane-dimethanol) and dimer fatty diols, and

wherein the composition is capable of phase separation upon curing to form phase-separated domains and/or particles comprising the impact modifier.

47. (New) A composition according to claim 1 wherein the impact modifier comprises polyamide or polyurethane.

48. (New) A composition according to claim 2 wherein the impact modifier comprises polyamide or polyurethane.

49. (New) A composition according to claim 45, wherein the polyester is formed from dimer fatty acids, adipic acid, and at least one diol having a molecular weight in the range from 50 to 200.

50. (New) The composition of claim 49, wherein said polyester comprises polyol residues derived from polyols selected from the group consisting of 1,4-butylene glycol, 1,6-hexylene glycol and neopentyl glycol.

51. (New) A composition according to claim 46, wherein the polyester is formed from dimer fatty acids and adipic acid.

52. (New) The composition of claim 51, wherein said polyester comprises polyol residues derived from polyols selected from the group consisting of 1,4-butylene glycol, 1,6-hexylene glycol and neopentyl glycol.